



## Complete Summary

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### TITLE

Rheumatoid arthritis: percentage of patients on immunosuppressive therapy for whom there is evidence that the following vaccines have been given: influenza (annually), pneumococcal, meningococcal, haemophilus B, hepatitis B, and tetanus.

### SOURCE(S)

Khanna D, Arnold EL, Pencharz JN, Grossman JM, Traina SB, Lal A, MacLean CH. Measuring process of arthritis care: the Arthritis Foundation's quality indicator set for rheumatoid arthritis. *Semin Arthritis Rheum*2006;35:211-237.

MacLean CH, Saag KG, Solomon DH, Morton SC, Sampsel S, Klippel JH. Measuring quality in arthritis care: methods for developing the Arthritis Foundation's quality indicator set. *Arthritis Rheum*2004 Apr 15;51(2):193-202. [PubMed](#)

## Measure Domain

### PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to assess the percentage of patients on immunosuppressive therapy for whom there is evidence that the following vaccines have been given: influenza (annually), pneumococcal, meningococcal, haemophilus B, hepatitis B, and tetanus.

### RATIONALE

Patients on immunosuppressive therapy are at an increased risk of infection with these pathogens.

The Centers for Disease Control Advisory Committee on Immunization Practices (ACIP) and the British Society of Rheumatology (BSR) have provided specific recommendations on immunization of patients with drug-induced immunosuppression.

### **PRIMARY CLINICAL COMPONENT**

Rheumatoid arthritis; immunosuppressive therapy; influenza vaccine; pneumococcal vaccine; meningococcal vaccine; haemophilus B vaccine; hepatitis B vaccine; tetanus vaccine

### **DENOMINATOR DESCRIPTION**

Patients with a diagnosis of rheumatoid arthritis who are on immunosuppressive therapy

### **NUMERATOR DESCRIPTION**

Patients for whom there is evidence that the following vaccines have been given: influenza (annually), pneumococcal, meningococcal, haemophilus B, hepatitis B, and tetanus.

## **Evidence Supporting the Measure**

### **EVIDENCE SUPPORTING THE CRITERION OF QUALITY**

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

## **Evidence Supporting Need for the Measure**

### **NEED FOR THE MEASURE**

Unspecified

## **State of Use of the Measure**

### **STATE OF USE**

Current routine use

### **CURRENT USE**

Internal quality improvement

### Application of Measure in its Current Use

#### **CARE SETTING**

Ambulatory Care  
Physician Group Practices/Clinics

#### **PROFESSIONALS RESPONSIBLE FOR HEALTH CARE**

Physicians

#### **LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED**

Individual Clinicians

#### **TARGET POPULATION AGE**

Unspecified

#### **TARGET POPULATION GENDER**

Either male or female

#### **STRATIFICATION BY VULNERABLE POPULATIONS**

Unspecified

### Characteristics of the Primary Clinical Component

#### **INCIDENCE/PREVALENCE**

Rheumatoid arthritis (RA) affects one percent of the adult population. RA affects approximately 2.5 million Americans, disproportionately women.

#### **EVIDENCE FOR INCIDENCE/PREVALENCE**

Alarcon GS. Epidemiology of rheumatoid arthritis. Rheum Dis Clin North Am 1995 Aug;21(3):589-604. [144 references] [PubMed](#)

Hochberg MC, Spector TD. Epidemiology of rheumatoid arthritis: update. Epidemiol Rev 1990;12:247-52. [48 references] [PubMed](#)

Hochberg MC. Adult and juvenile rheumatoid arthritis: current epidemiologic concepts. Epidemiol Rev 1981;3:27-44. [129 references] [PubMed](#)

Lawrence RC, Helmick CG, Arnett FC, Deyo RA, Felson DT, Giannini EH, Heyse SP, Hirsch R, Hochberg MC, Hunder GG, Liang MH, Pillemer SR, Steen VD, Wolfe F.

Estimates of the prevalence of arthritis and selected musculoskeletal disorders in the United States. *Arthritis Rheum*1998 May;41(5):778-99. [PubMed](#)

McDuffie FC. Morbidity impact of rheumatoid arthritis on society. *Am J Med*1985 Jan 21;78(1A):1-5. [PubMed](#)

## **ASSOCIATION WITH VULNERABLE POPULATIONS**

See the "Incidence/Prevalence" field.

## **BURDEN OF ILLNESS**

- Forty percent of patients with early rheumatoid arthritis (RA) (less than six months of symptoms) have erosive disease at presentation and remission is rare (less than 5%).
- The leading cause of mortality among patients with RA is bacterial infection. Patients with RA experience increased mortality from infection in part because of therapies used to treat their disease. The following drugs used to treat RA cause drug-induced immunosuppression: prednisone, methotrexate (MTX), leflunomide, azathioprine, cyclophosphamide, etanercept, infliximab, hydroxychloroquine (HCQ), and possibly gold and penicillamine. By reducing both the number and/or function of immune cells, these agents suppress the immune disorder that is causing symptoms in patients with RA. However, these same effects also place the patient at increased risk for developing bacterial infections.

## **EVIDENCE FOR BURDEN OF ILLNESS**

Elkayam O, Paran D, Caspi D, Litinsky I, Yaron M, Charboneau D, Rubins JB. Immunogenicity and safety of pneumococcal vaccination in patients with rheumatoid arthritis or systemic lupus erythematosus. *Clin Infect Dis*2002 Jan 15;34(2):147-53. [PubMed](#)

Hannonen P, Mottonen T, Hakola M, Oka M. Sulfasalazine in early rheumatoid arthritis. A 48-week double-blind, prospective, placebo-controlled study. *Arthritis Rheum*1993 Nov;36(11):1501-9. [PubMed](#)

Harrison BJ, Symmons DP, Brennan P, Barrett EM, Silman AJ. Natural remission in inflammatory polyarthritis: issues of definition and prediction. *Br J Rheumatol*1996 Nov;35(11):1096-100. [21 references] [PubMed](#)

Kelley W, Harris E, Ruddy S, Sledge C. *Textbook of rheumatology*. Vol. 1 Philadelphia (PA): W.B. Saunders Company; 1997.

Vandenbroucke JP, Kaaks R, Valkenburg HA, Boersma JW, Cats A, Festen JJ, Hartman AP, Huber-Bruning O, Rasker JJ, Weber J. Frequency of infections among rheumatoid arthritis patients, before and after disease onset. *Arthritis Rheum*1987 Jul;30(7):810-3. [PubMed](#)

## **UTILIZATION**

Over nine million physician visits and greater than 250,000 hospitalizations are attributed to rheumatoid arthritis (RA) per year.

### **EVIDENCE FOR UTILIZATION**

Allaire SH, Prashker MJ, Meenan RF. The costs of rheumatoid arthritis. *Pharmacoeconomics* 1994 Dec;6(6):513-22. [69 references] [PubMed](#)

Cooper NJ. Economic burden of rheumatoid arthritis: a systematic review. *Rheumatology (Oxford)* 2000 Jan;39(1):28-33. [33 references] [PubMed](#)

### **COSTS**

Rheumatoid arthritis (RA) has significant economic implications for the individual patient, as well as for society. Individuals with RA have 3 times the direct medical costs, twice the hospitalization rate and 10 times the work disability rate on an age- and sex-matched population. A recent study has shown annual medical costs for a patient with RA to be approximately \$8,500. Annual costs rise as the duration of the disease increases and as function declines. Indirect costs related to disability and work loss have been estimated to be 3 times higher than the direct costs associated with the disease.

### **EVIDENCE FOR COSTS**

American College of Rheumatology Subcommittee on Rheumatoid Arthritis. Guidelines for the management of rheumatoid arthritis: 2002 Update. *Arthritis Rheum* 2002 Feb;46(2):328-46. [PubMed](#)

## **Institute of Medicine National Healthcare Quality Report Categories**

### **IOM CARE NEED**

Living with Illness

### **IOM DOMAIN**

Effectiveness

## **Data Collection for the Measure**

### **CASE FINDING**

Users of care only

### **DESCRIPTION OF CASE FINDING**

Patients with a diagnosis of rheumatoid arthritis on immunosuppressive therapy

### **DENOMINATOR SAMPLING FRAME**

Patients associated with provider

## **DENOMINATOR INCLUSIONS/EXCLUSIONS**

### **Inclusions**

Patients with a diagnosis of rheumatoid arthritis on immunosuppressive therapy

### **Exclusions**

Unspecified

## **RELATIONSHIP OF DENOMINATOR TO NUMERATOR**

All cases in the denominator are equally eligible to appear in the numerator

## **DENOMINATOR (INDEX) EVENT**

Clinical Condition

Therapeutic Intervention

## **DENOMINATOR TIME WINDOW**

Time window is a single point in time

## **NUMERATOR INCLUSIONS/EXCLUSIONS**

### **Inclusions**

Patients for whom there is evidence that the following vaccines have been given:

- influenza (annually)
- pneumococcal
- meningococcal
- haemophilus B
- hepatitis B
- tetanus

### **Exclusions**

Unspecified

## **MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

## **NUMERATOR TIME WINDOW**

Episode of care

## **DATA SOURCE**

Administrative data  
Medical record  
Pharmacy data

#### **LEVEL OF DETERMINATION OF QUALITY**

Individual Case

#### **PRE-EXISTING INSTRUMENT USED**

Unspecified

### Computation of the Measure

#### **SCORING**

Rate

#### **INTERPRETATION OF SCORE**

Better quality is associated with a higher score

#### **ALLOWANCE FOR PATIENT FACTORS**

Unspecified

#### **STANDARD OF COMPARISON**

Internal time comparison

### Evaluation of Measure Properties

#### **EXTENT OF MEASURE TESTING**

Using a modification of the RAND Corporation/University of California Los Angeles (RAND/UCLA) Appropriateness Method, a multi-disciplinary expert panel comprised of nationally recognized experts in arthritis, primary care, and pain management discussed and rated the validity of each of the proposed measures based on 1) a summary of the evidence to support or refute each proposed measure and 2) their expert opinion.

#### **EVIDENCE FOR RELIABILITY/VALIDITY TESTING**

Khanna D, Arnold EL, Pencharz JN, Grossman JM, Traina SB, Lal A, MacLean CH. Measuring process of arthritis care: the Arthritis Foundation's quality indicator set for rheumatoid arthritis [in press]. Semin Arthritis Rheum:1-71.

MacLean CH, Saag KG, Solomon DH, Morton SC, Sampsel S, Klippel JH. Measuring quality in arthritis care: methods for developing the Arthritis Foundation's quality indicator set. Arthritis Rheum2004 Apr 15;51(2):193-202. [PubMed](#)

## Identifying Information

### **ORIGINAL TITLE**

Quality indicator 27. Vaccines.

### **MEASURE COLLECTION**

[The Arthritis Foundation's Quality Indicator Project](#)

### **MEASURE SET NAME**

[The Arthritis Foundation's Quality Indicator Set for Rheumatoid Arthritis](#)

### **SUBMITTER**

Arthritis Foundation

### **DEVELOPER**

Arthritis Foundation  
RAND Health

### **ADAPTATION**

Measure was not adapted from another source.

### **RELEASE DATE**

2005 Jan

### **MEASURE STATUS**

This is the current release of the measure.

### **SOURCE(S)**

Khanna D, Arnold EL, Pencharz JN, Grossman JM, Traina SB, Lal A, MacLean CH. Measuring process of arthritis care: the Arthritis Foundation's quality indicator set for rheumatoid arthritis. Semin Arthritis Rheum2006;35:211-237.

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## **MEASURE AVAILABILITY**

The individual measure, "Quality Indicator 27. Vaccines," is published in "Measuring Process of Arthritis Care: The Arthritis Foundation's Quality Indicator Set for Rheumatoid Arthritis."

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E-mail: [RAND\\_Health@rand.org](mailto:RAND_Health@rand.org)

## **NQMC STATUS**

This NQMC summary was completed by ECRI on October 25, 2006. The information was verified by the measure developer on February 1, 2007.

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